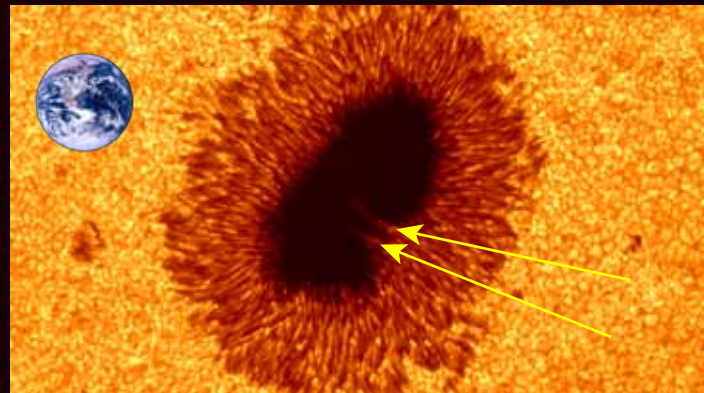
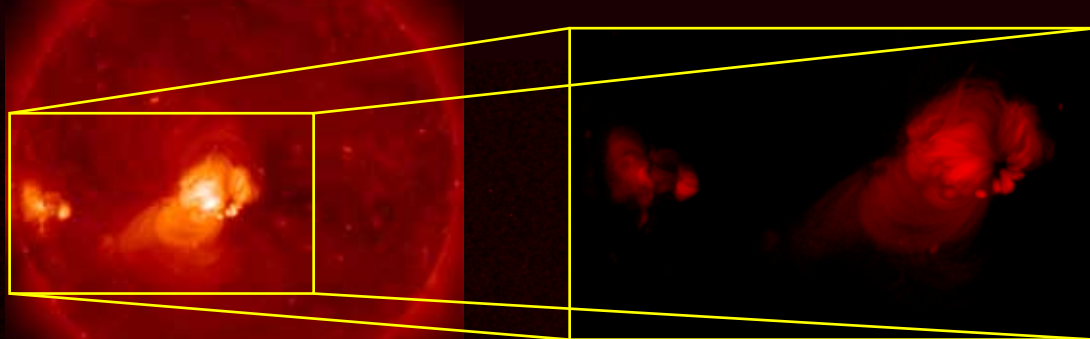


Sunspot Magnetic Fields Extend from Photosphere to Corona



The image on the right is Active Region (AR) 10923, a region in the photosphere that sits below the bright X-ray loop structure, seen close to the center of the solar disk. The magnetic field associated with AR 10923 penetrates high into the solar corona. In addition to the studies of the magnetic field, the resolution of Hinode allowed a study of the formation of "light bridges" in the umbra of AR 10923. The umbra of a sunspot is the dark central region, the penumbra is the surrounding lighter, filamentary area. Sunspots are darker than the surrounding region because the magnetic field of the sunspot inhibits heat flow from below. Temperatures of the unspotted photosphere are approximately 6000 K. Temperatures in sunspots are approximately 4000 K. The circle in the image, shows the size of the Earth.

A jet in the Sun's polar coronal hole, January 10, 2007
Jets are created when magnetic reconnection occurs between open coronal field lines and the magnetic flux that is emerging from below.

High resolution X-ray images from Hinode have made it possible to see that "bright points" are really magnetic loops.

Hinode (Solar-B)

A project to study the Sun by improving our understanding of the mechanisms that power the solar atmosphere and drive solar eruptions.

Hinode is led by the Japanese Aerospace Exploration Agency (JAXA) in collaboration with NASA, the Science and Technology Facilities Council (STFC), and the European Space Agency (ESA). Hinode is a Japanese mission developed, launched and operated by ISAS/JAXA, in partnership with NAOJ, NASA and STFC (UK). Additional operational support is provided by ESA and NSC (Norway).

<http://hinode.msfc.nasa.gov>